UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,449	10/30/2003	Sridhar Gollamudi	LUCW:0008/FLE Gollamudi 7	7972

48671 7590 03/31/2009

FLETCHER YODER (LUCENT)
P.O. BOX 692289
HOUSTON, TX 77069

EXAMINER	
MEHRA, INDER P	

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
03/31/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/697,449	GOLLAMUDI ET AL.	
	Examiner	Art Unit	
	INDER P. MEHRA	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 March 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-17 and 19-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-17 and 19-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to amendment dated: 3/12/2009. Based on this application, claims 1-23 are pending, out of which claims 3 and 18 have been cancelled and claims 1, 9 and 16 have been amended.

Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-2, 5-11, 14-17 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Reudink et al** (US Pub. No. 20040235527), hereinafter, Reudink in view of **Walton et al** (US Patent No. 6,744,743), hereinafter Walton, and further, in view of **Grube et al** (US Patent No. 5, 319,796), hereinafter, Grube.

4. The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

For claims 1 and 16, **Reudink** teaches that a communication system **(Reudink teaches system to optimize data throughput in wireless communications network, refer to Abstract and figs. 1, 2A-2D, 3A-3C and 4, paragraph 0014)** ,comprising:

a beam former (**form multiple beams**, **paragraphs 0052 and 0054)** that is adapted to provide a plurality of beams (forming **multiple antenna beams, abstract, paragraphs 0014 and 0092),** each of the plurality of beams providing communication for a corresponding coverage envelope **(coverage in area 360, paragraph 0014)**, the plurality of coverage envelopes comprising at least one pair of overlapping coverage envelopes **(overlapping, paragraph 0014)** and at least one pair of non-overlapping coverage envelopes (non-overlapping, **paragraphs 0014)**; and

---the scheduler being adapted to --- the same system resources from the group of shared system resources for use during a simultaneous data transmission to a receiver in each of the coverage envelopes **(simultaneous use of two or more beams—is possible and are easily achievable refer to paragraph 0020)** that comprises the at least one pair of non-overlapping coverage envelopes **(use of CDMA to code share a single resource among multiple users, refer to paragraph 0052);**

non-overlapping coverage envelop, **(non-overlapping antenna beams to provide directional wireless signal coverage, refer to paragraph 0014 and abstract); (Note: Reudink uses a code as a single source to multiple users who may at different coverage areas.);**

wherein the group of shared system resources comprises a group of channelization codes, **(Reudink teaches channels to allow code sharing of RF channels, paragraphs 0025 and 0052).**

Reudink does not teaches explicitly the following limitations, which are disclosed by Walton, as follows:

a scheduler **(schedule terminals and assign channels, paragraph 0118)** that assigns system resources from a group of shared system resources to a plurality of receivers distributed throughout the coverage envelopes **(scheduling of resources by using Code Division Multiplexing, paragraph 0061)**,.

Reudink in view of Walton does not teaches explicitly the following limitations, which are disclosed by Grube, as follows:

"---schedule the allocation of the group of shared system resources such that no two users served by a pair of overlapping coverage envelopes are assigned the same system resources from the group of shared system resources---",

(Grube teaches , "Because the two coverage areas 105, 125 overlap in the area where two mobiles 117, 129 are currently travelling, and both systems have the same channel resource, there will be interference if both systems utilize that channel at the same time", refer to col. 3 lines 30-35. If a co-channel user begins transmitting during an assigned call, the controller 101 may move the call to another channel to avoid further interference, and the next channel is chosen as the channel with the least amount of recent co-channel usage, refer to col. 3 lines 43-47).

It would have been obvious to the person of ordinary skill in the art at the time the invention to use a scheduler that assign system resources from a group of shared system resources to a plurality of receivers distributed throughout the coverage envelopes, as taught by Walton. The combination of non-overlapping coverage area with sharing of resources could be implemented

by Base Station. The motivation for using this capability was to achieve increased capacity and/or desired levels of throughput, quality of service. Further, it would have been obvious to the person of ordinary skill in the art at the time the invention to use a scheduler to schedule the allocation of the group of shared system resources such that no two users served by a pair of overlapping coverage envelopes are assigned the same system resources from the group of shared system resources---, taught by Grube. The motivation for using this capability was to achieve techniques to schedule efficiently data transmission and to assign channels to users, refer to Walton's abstract.

For claim 9, **Reudink** teaches a method of scheduling data transmissions in a communication system that has a group of shared system resources, the communication system being adapted to provide communication with a plurality of receivers **(Reudink teaches assignments with respect to simultaneous usage are made to those pairs, such as remote stations, paragraph 0023]. Further teaches, CDMA communication channels to allow code sharing of RF channels among multiple users, paragraph 0025]. (Reudink teaches system to optimize data throughput in wireless commu nications network, refer to Abstract and figs. 1, 2A-2D, 3A-3C and 4, paragraph 0014)**

the method comprising the acts of:

providing a plurality of beams that each provide communications to a corresponding coverage envelope (forming **multiple antenna beams, abstract, paragraph 0092, coverage in area 360, paragraph 0014),** the plurality of coverage envelopes comprising at least one pair of overlapping coverage envelopes **(coverage in area 360, paragraph 0014**, **overlapping, paragraph 0014)** and at least one pair of non-overlapping coverage envelopes **(non-overlapping**, **paragraphs 0014)**;

the plurality of receivers being distributed throughout the plurality of coverage envelopes **(distribution to remote users, paragraph 0013)** and

during a simultaneous data transmission to a receiver in each of the coverage envelopes **(simultaneous use of two or more beams---is possible and are easily achievable, refer to paragraph 0020);**

wherein the group of shared system resources comprises a group of channelization codes **[Reudink teaches channels to allow code sharing of RF channels, paragraphs 0025 and 0052]** .

Reudink does not teach following limitation, which is disclosed by Walton, as follows:

scheduling the allocation of the group of shared system resources such that receivers served by a pair of overlapping coverage envelopes receive the same system resources for use

(Walton teaches scheduling of resources by using CDMA, paragraph 0061);

Reudink in view of Walton does not teach following limitation, which is disclosed by Grube, as follows:

Served by a pair of overlapping coverage envelopes**(Grube teaches overlapping coverage area, fig. 1B and col. 3 lines 55-60);**

that comprises the at least one pair of overlapping coverage envelopes**(Grube teaches overlapping coverage area, fig. 1B and col. 3 lines 55-60);**

It would have been obvious to the person of ordinary skill in the art at the time the invention to use scheduling the allocation of the group of shared system resources such that receivers served by a pair of overlapping coverage envelopes receive the same system resources for use, as taught by Walton. The combination of overlapping coverage area with sharing of resources could be implemented by Base Station. The motivation for using this capability was to achieve increased capacity and/or desired levels of throughput, quality of service.

For claims 2, 10 and 17, **Reudink in view of Walton and Grube teaches all the limitations of subject matter and in addition Reudink ,further, teaches, "**The communication system set forth in claim 1, wherein the communication system comprises a fixed beam network", **(Fixed Beam Arrays, paragraph 0050).**

For claim 11, **Reudink in view of Walton and Grube teaches all the limitations of subject matter, as applied to claim 9, as above;**

Reudink, further, teaches, The communication system set forth in claim 9, as above, the act of defining a group of channelization codes to comprise the group of shared system resources , **(Reudink teaches channels to allow code sharing of RF channels, paragraph 0025).**

For claim 14, **Reudink in view of Walton and Grube teaches all the limitations of subject matter, as applied to the method set forth in claim 9, as above,** comprising, **and Reudink, further, teaches, "** the act of transmitting data to at least a subset of the plurality of receivers according to a code division multiple access (CDMA) communication protocol, (**CDMA communication channels to allow code sharing of RF channels among multiple users, refer to paragraph 0025).**.

For claims 5 and 20, **Reudink in view of Walton and Grube teaches all the limitations of subject matter, as applied to, t**he communication system set forth in claima 1 and 16, as above, comprising: at least one antenna for transmitting communication signals to and receiving communication signals from the plurality of receivers, **(Reudink teaches, "multiple antenna beam remote stations", abstract).**

For claims 6 and 21, **Reudink in view of Walton and Grube teaches all the limitations of subject matter, as applied to,** The communication system set forth in claim 1 and 16, as above, wherein the communication system comprises a cellular telephone base station, **(Reudink teaches, "cellular communication system including Base Station", refer to paragraph 0008 and fig. 2A).**

For claims 7 and 22, **Reudink in view of Walton and Grube teaches all the limitations of subject matter, as applied to,** The communication system set forth in claim 1 and 16, as above, wherein the communication system comprises a code division multiple access (CDMA) cellular telephone base station.
, **(Reudink teaches, "CDMA cellular communication system including Base Station", refer to paragraph 0009 and fig. 2A).**

For claims 8, 15 and 23, **Reudink in view of Walton teaches all the limitations of subject matter, as applied to, claims 1, 9 and 16 respectively. In addition, following limitations are disclosed by Walton, as follows:**

wherein the scheduler prioritizes the plurality of receivers based on at least one scheduling priority metric prior to assigning resources from the group of shared system resources, **(scheduling of receivers based on priority metric, col. 28 line 62 through col. 29 lines 27)**,.

It would have been obvious to the person of ordinary skill in the art at the time the invention to use a scheduler prioritizes the plurality of receivers based on at least one scheduling priority metric prior to assigning resources from the group of shared system resources, as taught by Walton. The capability could be implemented by Base Station. The motivation for using this capability was to assign channels based on priorities, col. 29 lines 40-42.

5. Claims 4, 12-13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Reudink** in view of **Walton** and **,** further, in view of **Wiedeman et al** (US Pub. No. 2002/0039900), hereinafter, Wiedeman.

For claims 4, 12-13 and 19, **Reudink** in view of **Walton** teach all the limitations of subject matter , as applied to, claims 1, 9, 12 and 16 respectively, **Reudink, further, teaches,** "wherein the scheduler" **(use of CDMA to code share a single resource among multiple users, refer to paragraph 0052);** maintains a list of the group of shared system resources, **(see claims 4, 12-13 and 19), (available resources, paragraph 0067, 0018-0019 and 0052);** and

Reudink in view of Walton does not teach the following limitations, which are disclosed by Wiedeman, as follows:

"updates the list as shared system resources are assigned to the plurality of receivers", **(updated system resources information, paragraph 0181).**

It would have been obvious to the person of ordinary skill in the art at the time the invention to use updated list of resources, as taught by **Wiedeman**. The updated list of resources could be implemented by Base Station. The motivation for using this capability was to establish signaling channel periodically, refer to paragraph 0181.

Response to Arguments

6. Applicant's arguments filed 3/12/09 have been fully considered but they are not persuasive.

Arguments by Applicant

Applicant argues, Reudink, Walton, and Wiedeman, taken alone or in hypothetical combination, fail to teach each element of amended independent claims 1, 9, and 16. Amended independent claim 1 recites, in part, "[a] scheduler being adapted to schedule the allocation of the group of shared system resources such that no two users served by a pair of overlapping coverage envelopes are assigned the same system resources." (Emphasis added.) Similarly, amended independent claim 9 recites, in part, "scheduling the allocation of the group of shared system resources such that no receivers served by a pair of overlapping coverage envelopes receive the same system resources during a simultaneous data transmission." (Emphasis added.)

Response by Examiner

In response, examiner states , Grube teaches, "Because the two coverage areas 105, 125 overlap in the area where two mobiles 117, 129 are currently travelling, and both systems have the same channel resource, there will be interference if both systems utilize that channel at the same time", refer to col. 3 lines 30-35. If a co-channel user begins transmitting during an assigned call, the controller 101 may move the call to another channel to avoid further interference, and the next channel is chosen as the channel with the least amount of recent co-channel usage, refer to col. 3 lines 43-47

In light of above explanation, argument by applicant is not persuasive..

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to INDER P. MEHRA whose telephone number is (571)272-3170. The examiner can normally be reached on Monday through Friday from 8AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne Bost can be reached on 571-272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Inder P Mehra/
Examiner, Art Unit 2617

/Dwayne D. Bost/
Supervisory Patent Examiner,
Art Unit 2617